CLAIMS

1. A manufacturing process for a resin composition comprising a kneading step of kneading a thermoplastic resin and an additive under heating, wherein, prior to the kneading step, the manufacturing process further comprises a preliminary step of pre-heating and mixing the thermoplastic resin and the additive, and transition of the mixture obtained in the preliminary step to the kneading step is carried out while maintaining a temperature reached at the end of the preliminary step, and then kneading is carried out.

2. A manufacturing process for a resin composition comprising a kneading step of kneading a thermoplastic resin and an additive under heating, wherein, prior to the kneading step, the manufacturing process further comprises a preliminary step of pre-heating and mixing the thermoplastic resin and the additive, and the mixture obtained in the preliminary step is transitioned to the kneading step in a heated state at a reduced temperature that is lower than a temperature reached at the end of the preliminary step, and then kneaded.

3. The manufacturing process according to claims 1 or 2, wherein, when the mixture at the end of the preliminary step has a temperature of X (°C) and the mixture at the time of transition to the kneading step has a temperature of Y (°C), the condition of the formula (I) below is satisfied

$$0 \leq (X-Y) \leq 100 \qquad (I) .$$

4. The manufacturing process according to claims 1 or 2, wherein the preliminary step has a heating temperature in the range of 100 to 250°C.

5. The manufacturing process according to claims 1 or 2, wherein the mixture at the time of transition to the kneading step has a temperature in the range of 30 to 200°C.

6. The manufacturing process according to claims 1 or 2, wherein the kneading step has a temperature in the range of 80 to 350°C.

7. The manufacturing process according to claims 1 or 2, wherein the additive comprises an inorganic flame retardant.

8. The manufacturing process according to claim 7, wherein the inorganic flame retardant has a Mn/Mw ratio of a number-average particle size Mn to a weight-average particle size Mw in the range of 0.2 to 1.0.

9. The manufacturing process according to claim 7, wherein the inorganic flame retardant has a content of particles with a particle size of 0.70 to 15.0 μm of at least 90.0%.

10. The manufacturing process according to claim 7, wherein the inorganic flame retardant is a microparticulate obtained by grinding using fluid shear forces generated by rotating two opposed rotors respectively in the same direction or in opposing directions.

11. The manufacturing process according to claim 7, wherein the thermoplastic resin and the inorganic flame retardants have a mixing ratio such that, in terms of weight proportion, the thermoplastic resin is in the range of 0.5 to 1,000 parts per 1 part of the inorganic flame retardant.

12. The manufacturing process according to claim 7, wherein the thermoplastic resin and the inorganic flame retardants have a mixing ratio such that, in terms of weight proportion, the thermoplastic resin is in the range of 5 to 20 parts per 1 part of the inorganic flame retardant.

13. The manufacturing process according to claim 7, wherein the inorganic flame retardant comprises at least one retardant selected from the group consisting of metal hydroxides, metal carbonates, red phosphorus, and flexible graphite.

14. The manufacturing process according to claim 7, wherein the inorganic flame retardant comprises at least one retardant selected from the group consisting of magnesium hydroxide, aluminum hydroxide, calcium hydroxide, calcium carbonate, red phosphorus, and flexible graphite.

15. The manufacturing process according to claims 1 or 2, wherein the thermoplastic resin has a melting point of 70 to 350°C.

16. The manufacturing process according to claims 1 or 2, wherein, when the heating temperature of the preliminary step is Z (°C) and the melting temperature of the thermoplastic resin is T (°C), Z is in the range given by the formula (II) below

$$(T - 50) \leq Z \leq T \qquad \text{(II)} .$$

17. The manufacturing process according to claims 1 or 2, wherein the additive comprises at least one additive selected from the group consisting of ore powders, organic substances, plant tissue-derived powders, carbon powders, inorganic salts, and pigments.

18. The manufacturing process according to claims 1 or 2, wherein the additive comprises at least one additive selected from the group consisting of ground tourmaline, tartaric acid, ground *wasabi* horseradish, ground soybean residues, ground red pepper, ground black pepper, ground *matsutake* mushrooms, ground *shiitake* mushrooms, wood flour, ground paper, ground tea leaf waste, ground coffee residues, carbon black, talc, ground wood charcoal, ground bamboo charcoal, ground cacao bean shells, organic pigments, inorganic pigments, and calcium carbonate.

19. The manufacturing process according to claims 1 or 2, wherein the additive comprises an inorganic flame retardant, and at the time of transition to the kneading step, the mixture has a temperature in the range of 50 to 150°C.

20. The manufacturing process according to claims 1 or 2, wherein

the additive comprises magnesium hydroxide, and at the time of transition to the kneading step, the mixture has a temperature in the range of 50 to 150°C.

21. The manufacturing process according to claims 1 or 2, wherein the additive comprises magnesium hydroxide and aluminum hydroxide, and at the time of transition to the kneading step, the mixture has a temperature in the range of 50 to 130°C.

22. The manufacturing process according to claims 1 or 2, wherein the additive comprises plant tissue-derived powders, and at the time of transition to the kneading step, the mixture has a temperature in the range of 30 to 100°C.

23. The manufacturing process according to claims 1 or 2, wherein the additive comprises wood flour, and at the time of transition to the kneading step, the mixture has a temperature in the range of 50 to 100°C.

24. The manufacturing process according to claims 1 or 2, wherein the thermoplastic resin comprises at least one resin selected from the group consisting of polyolefins, acrylonitrile-butadiene-styrene copolymers (ABS), acrylonitrile-styrene copolymers (AS), polystyrene (PS), polyesters, thermoplastic elastomers (thermoplastic elastomers, TPE), and thermoplastic urethanes (thermoplastic urethanes, TPU).

25. The manufacturing process according to claim 24, wherein the polyolefins comprise at least one of polyethylene (PE) and polypropylene (PP) and the polyesters comprise at least one compound selected from the group consisting of polyethylene terephthalate (PET), polylactic acid, and polyhydroxybutyrate (PHB).

26. The manufacturing process according to claims 1 or 2, wherein the thermoplastic resin is a polyolefin and the preliminary step has a heating temperature in the range of 50 to 220°C.

27. The manufacturing process according to claims 1 or 2, wherein

the thermoplastic resin is a polypropylene and the preliminary step has a heating temperature in the range of 80 to 200°C.

28. The manufacturing process according to claims 1 or 2, wherein the thermoplastic resin is a polyethylene and the preliminary step has a heating temperature in the range of 60 to 180°C.

29. A resin composition prepared in accordance with the manufacturing process according to claims 1 or 2.

30. A resin product utilizing the resin composition according to claim 29.

31. A resin composition prepared in accordance with the manufacturing process according to claim 7.

32. The resin composition according to claim 31, wherein the inorganic flame retardant comprises magnesium hydroxide.

33. The resin composition according to claim 31, wherein the inorganic flame retardant comprises aluminum hydroxide and magnesium hydroxide.

34. The resin composition according to claim 31, wherein the inorganic flame retardant comprises flexible graphite and magnesium hydroxide.

35. The resin composition according to claim 31, wherein the thermoplastic resin comprises at least one resin selected from the group consisting of polyolefins, acrylonitrile-butadiene-styrene copolymers (ABS), acrylonitrile-styrene copolymers (AS), polystyrene (PS), polyesters, thermoplastic elastomers (thermoplastic elastomers, TPE), and thermoplastic urethanes (thermoplastic urethanes, TPU).

36. A resin composition according to claim 35, wherein the polyolefins comprise at least one of polyethylene (PE) and polypropylene (PP), and the polyesters comprise at least one compound

selected from the group consisting of polyethylene terephthalate (PET), polylactic acid, and polyhydroxybutyrate (PHB).

37. The resin composition according to claim 31 used for electric cable coatings.

38. An electric cable comprising a coating formed from the resin composition according to claim 37.